In the Specification:

Please substitute the following paragraph where indicated. The amendment includes no new matter and is fully supported in the application as filed. This amendment is limited to transferring descriptive text from the originally filed figures to the written specification, in order to more fully explain the invention to the public. In transferring the text, some apparent grammatical and/or typographical errors have been corrected.

Beginning on page 5, at line 1, please insert the following paragraph.

To more clearly convey the invention, the figures illustrate various aspects of the biosensor, as follows. FIG. 1 shows airway ciliated cells and goblet cells observed with a scanning electron microscope (SEM). Cilia on the surface of ciliated cells and secreted mucin from goblet cells are clearly shown. In FIG. 2 are shown airway epithelial cells at an air-liquid interface, and a measuring device for their physiological properties (i.e. transepithelial electrical resistance). FIG. 3 shows a line graph depicting transepithelial electrical resistance (Ohms/cm^2) across a monolayer of A549 cells grown on a polyester membrane support. FIG. 4 shows that quinacrine stain was accumulated specifically inside mucin secretory granules of the airway goblet cells. Cells were stained in 100 μM quinacrine for 5 minutes. The concentration-dependence of UTP-induced mucin exocytosis in normal tracheal goblet cells is shown in FIG. 5. The concentration-dependence curves were reproduced in triplicate.

The secretion of mucin was monitored with quinacrine fluorescence. Data were fit as a sigmoidal dose-response. FIG. 6 is a line graph showing a ciliary beating frequency (CBF) calibration curve. The results from our CBF measurement system are similar to the results obtained from fast cinematography (a standard method). A cross-section image of cylindrical nanopores formed in p++ Si is shown in FIG. 7, according to prior art by Janshoff et al., 1998. Similarly, FIG. 8 shows that porous size varies with applied current; p++ Si, HF (aq):EtOH=3:1, according to the prior art of Janshoff et al, 1998. FIG. 9 illustrates patterned airway epithelial cell layers trapped on porous silicon support. FIG. 10 is a schematic diagram for incorporation of airway epithelial cell layers grown on porous silicon into a microfluidic device or flow chamber. FIG. 11 depicts a sensing device for cell physiological parameters. The device has a gas or fluid perfusion path, a media perfusion path, Snapwell, and four electrodes (Harvard Apparatus, Holliston, MA).

Conclusion

In view of the substituted drawings and preliminary amendment, it is submitted that the pending claims are patentable. Applicants, therefore, respectfully request allowance of the application.

If the further prosecution can be facilitated through a telephone conference between the Examiner and the undersigned, the Examiner is respectfully requested to telephone the undersigned.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that the foregoing is being deposited with the United States Postal Service as Express Mail, No. EV301407292US in an envelope addressed to the Commissioner of Patents, Mail Stop Missing Parts, P.O. Box 1450, Alexandria Virginia 22313-1450, this 8th day of June, 2004

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